

LNCS 3252

Hai Jin
Yi Pan
Nong Xiao
Jianhua Sun (Eds.)

Grid and Cooperative Computing – GCC 2004 Workshops

GCC 2004 International Workshops
IGKG, SGT, GISS, AAC-GEVO, and VVS
Wuhan, China, October 2004, Proceedings



Springer

Hai Jin Yi Pan Nong Xiao
Jianhua Sun (Eds.)

Grid and Cooperative Computing – GCC 2004 Workshops

GCC 2004 International Workshops
IGKG, SGT, GISS, AAC-GEVO, and VVS
Wuhan, China, October 21-24, 2004
Proceedings



Volume Editors

Hai Jin

Jianhua Sun

Huazhong University of Science and Technology, Cluster and Grid Computing Lab

430074 Wuhan, China

E-mail: {hjin, jhsun}@hust.edu.cn

Yi Pan

Georgia State University, Department of Computer Science

34 Peachtree Street, Suite 1450, Atlanta, GA 30302-4110, USA

E-mail: pan@cs.gsu.edu

Nong Xiao

National University of Defense Technology, School of Computer

Changsha, 410073 China

E-mail: xiao-n@vip.sina.com

Library of Congress Control Number: 2004113699

CR Subject Classification (1998): C.2, D.4, I.2.11, H.4, H.3, H.5, K.6.5

ISSN 0302-9743

ISBN 3-540-23578-7 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springeronline.com

© Springer-Verlag Berlin Heidelberg 2004

Printed in Germany

Typesetting: Camera-ready by author, data conversion by Olgun Computergrafik

Printed on acid-free paper SPIN: 11323686 06/3142 5 4 3 2 1 0

Commenced Publication in 1973

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

New York University, NY, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Preface

Welcome to the proceedings of GCC 2004 and the city of Wuhan. Grid computing has become a mainstream research area in computer science and the GCC conference has become one of the premier forums for presentation of new and exciting research in all aspects of grid and cooperative computing. The program committee is pleased to present the proceedings of the 3rd International Conference on Grid and Cooperative Computing (GCC 2004), which comprises a collection of excellent technical papers, posters, workshops, and keynote speeches. The papers accepted cover a wide range of exciting topics, including resource grid and service grid, information grid and knowledge grid, grid monitoring, management and organization tools, grid portal, grid service, Web services and their QoS, service orchestration, grid middleware and toolkits, software glue technologies, grid security, innovative grid applications, advanced resource reservation and scheduling, performance evaluation and modeling, computer-supported cooperative work, P2P computing, automatic computing, and meta-information management.

The conference continues to grow and this year a record total of 581 manuscripts (including workshop submissions) were submitted for consideration. Expecting this growth, the size of the program committee was increased from 50 members for GCC 2003 for 70 in GCC 2004. Relevant differences from previous editions of the conference: it is worth mentioning a significant increase in the number of papers submitted by authors from outside China; and the acceptance rate was much lower than for previous GCC conferences. From the 427 papers submitted to the main conference, the program committee selected only 96 regular papers for oral presentation and 62 short papers for poster presentation in the program. Five workshops, International Workshop on Agents, and Autonomic Computing, and Grid Enabled Virtual Organizations, International Workshop on Storage Grids and Technologies, International Workshop on Information Security and Survivability for Grid, International Workshop on Visualization and Visual Steering, International Workshop on Information Grid and Knowledge Grid, complemented the outstanding paper sessions.

The submission and review process worked as follows. Each submission was assigned to three program committee members for review. Each program committee member prepared a single review for each assigned paper or assigned a paper to an outside reviewer for review. Given the large number of submissions, each program committee member was assigned roughly 15–20 papers. The program committee members consulted 65 members of the grid computing community in preparing the reviews. Based on the review scores, the program chairs made the final decision. Given the large number of submissions, the selection of papers required a great deal of work on the part of the committee members.

Putting together a conference requires the time and effort of many people. First, we would like to thank all the authors for their hard work in preparing submissions to the conference. We deeply appreciate the effort and contributions of the program committee members who worked very hard to select the very best submissions and to put together an exciting program. We are also very grateful for the numerous suggestions

we received from them. Also, we especially thank the effort of those program committee members who delivered their reviews in a timely manner despite having to face very difficult personal situations. The effort of the external reviewers is also deeply appreciated. We are also very grateful to Ian Foster, Jack Dongarra, Charlie Catlett, and Tony Hey for accepting our invitation to present a keynote speech, and to Depei Qian for organizing an excellent panel on a very exciting and important topic. Thanks go to the workshop chairs for organizing five excellent workshops on several important topics in grid computing. We would also like to thank Pingpeng Yuan for installing and maintaining the submission website and working tirelessly to overcome the limitations of the tool we used.

We deeply appreciate the tremendous efforts of all the members of the organizing committee. We would like to thank the general co-chairs, Prof. Andrew A. Chien and Prof. Xicheng Lu for their advice and continued support. Finally, we would like to thank the GCC steering committee for the opportunity to serve as the program chairs as well as their guidance through the process. We hope that the attendees enjoyed this conference and found the technical program to be exciting.

Hai Jin and Yi Pan

Conference Committees

Steering Committee

Guojie Li (Institute of Computing Technology, CAS, China)
Xiaodong Zhang (National Science Foundation, USA)
Zhiwei Xu (Institute of Computing Technology, CAS, China)
Xianhe Sun (Illinois Institute of Technology, USA)
Jun Ni (University of Iowa, USA)
Hai Jin (Huazhong University of Science and Technology, China)
Minglu Li (Shanghai Jiao Tong University, China)

Conference Co-chairs

Andrew A. Chien (University of California at San Diego, USA)
Xicheng Lu (National University of Defense Technology, China)

Program Co-chairs

Yi Pan (Georgia State University, USA)
Hai Jin (Huazhong University of Science and Technology, China)

Workshop Chair

Nong Xiao (National University of Defense Technology, China)

Panel Chair

Depei Qian (Xi'an Jiaotong University, China)

Publicity Chair

Minglu Li (Shanghai Jiao Tong University, China)

Tutorial Chair

Dan Meng (Institute of Computing Technology, CAS, China)

Poster Chair

Song Wu (Huazhong University of Science and Technology, China)

Program Committee Members

Mark Baker (University of Portsmouth, UK)
Rajkumar Buyya (University of Melbourne, Australia)
Wentong Cai (Nanyang Technological University, Singapore)
Jiannong Cao (Hong Kong Polytechnic University, Hong Kong)
Guanghai Chen (Nanjing University, China)
Xiaowu Chen (Beihang University, China)
Xuebin Chi (Computer Network Information Center, CAS, China)
Qianni Deng (Shanghai Jiao Tong University, China)
Shoubin Dong (South China University of Technology, China)
Xiaoshe Dong (Xi'an Jiaotong University, China)
Dan Feng (Huazhong University of Science and Technology, China)
Ning Gu (Fudan University, China)
Yadong Gui (Shanghai Supercomputer Center, China)
Minyi Guo (University of Aizu, Japan)
Yanbo Han (Institute of Computing Technology, CAS, China)
Yanxiang He (Wuhan University, China)
Jinpeng Huai (Beihang University, China)
Chun-Hsi Huang (University of Connecticut, USA)
Liusheng Huang (University of Science and Technology of China, China)
Kai Hwang (University of Southern California, USA)
Weijia Jia (City University of Hong Kong, Hong Kong)
Francis Lau (The University of Hong Kong, Hong Kong)
Keqin Li (State University of New York, USA)
Minglu Li (Shanghai Jiao Tong University, China)
Qing Li (City University of Hong Kong, Hong Kong)
Qinghua Li (Huazhong University of Science and Technology, China)
Xiaoming Li (Peking University, China)
Xiaola Lin (City University of Hong Kong, Hong Kong)
Xinda Lu (Shanghai Jiao Tong University, China)
Zhengding Lu (Huazhong University of Science and Technology, China)
Junzhou Luo (Southeast University, China)
Dan Meng (Institute of Computing Technology, CAS, China)
Xiangxu Meng (Shandong University, China)
Xiaofeng Meng (Renmin University of China, China)
Geyong Min (University of Bradford, UK)
Jun Ni (University of Iowa, USA)
Lionel Ni (Hong Kong University of Science and Technology, Hong Kong)
Depei Qian (Xi'an Jiaotong University, China)
Yuzhong Qu (Southeast University, China)

Hong Shen (Japan Advanced Institute of Science and Technology, Japan)
Ke Shi (Huazhong University of Science and Technology, China)
Ninghui Sun (Institute of Computing Technology, CAS, China)
Yuzhong Sun (Institute of Computing Technology, CAS, China)
David Taniar (Monash University, Australia)
Huaglory Tianfield (Glasgow Caledonian University, UK)
Weiqin Tong (Shanghai University, China)
David W. Walker (Cardiff University, UK)
Cho-Li Wang (The University of Hong Kong, Hong Kong)
Xingwei Wang (Northeastern University, China)
Jie Wu (Florida Atlantic University, USA)
Song Wu (Huazhong University of Science and Technology, China)
Zhaohui Wu (Zhejiang University, China)
Nong Xiao (National University of Defense Technology, China)
Cheng-Zhong Xu (Wayne State University, USA)
Baoping Yan (Computer Network Information Center, CAS, China)
Guangwen Yang (Tsinghua University, China)
Laurence Tianruo Yang (St. Francis Xavier University, Canada)
Qiang Yang (Hong Kong University of Science and Technology, Hong Kong)
Shoubao Yang (University of Science and Technology of China, China)
Zhonghua Yang (Nanyang Technological University, Singapore)
Pingpeng Yuan (Huazhong University of Science and Technology, China)
Weimin Zheng (Tsinghua University, China)
Yao Zheng (Zhejiang University, China)
Luo Zhong (Wuhan University of Technology, China)
Aoying Zhou (Fudan University, China)
Wanlei Zhou (Deakin University, Australia)
Xinrong Zhou (Åbo Akademi University, Finland)
Jianping Zhu (University of Akron, USA)
Mingfa Zhu (Lenovo Research, China)
Hai Zhuge (Institute of Computing Technology, CAS, China)

Local Arrangements Chair

Pingpeng Yuan (Huazhong University of Science and Technology, China)

Exhibition Chair

Qin Zhang (Huazhong University of Science and Technology, China)

Financial Chair

Xin Li (Huazhong University of Science and Technology, China)

Industry Chair

Xia Xie (Huazhong University of Science and Technology, China)

Publication Chair

Jianhua Sun (Huazhong University of Science and Technology, China)

Conference Secretary

Cong Geng (Huazhong University of Science and Technology, China)

Reviewers

Rashid Al-Ali	Yingwei Luo	Xianbing Wang
Jeff Dallien	Wendy MacCaull	Xiaofang Wang
Zhiqun Deng	Praveen Madiraju	Xiaolin Wang
Jonathan Giddy	Shalil Majithia	Xingwei Wang
Ian Grimstead	Zhongquan Mao	Yuelong Wang
Zhengxiong Hou	Stephen Pellicer	Mark Wright
Yanli Hu	Weizong Qiang	Guang Xiang
Ajay Katangur	Ling Qiu	Bin Xiao
Yunchun Li	Shrija Rajbhandari	Xia Xie
Na Lin	Omer Rana	Shaomin Zhang
Zhen Lin	Geoffrey Shea	Yang Zhang
Hui Liu	Praveena Tayanthi	Ran Zheng
Tao Liu	Ian Taylor	Jingyang Zhou
Xinpeng Liu	Baoyi Wang	Cheng Zhu
Sanglu Lu	Guojun Wang	Deqing Zou
Zhongzhi Luan	Hui Wang	

Lecture Notes in Computer Science

For information about Vols. 1–3187

please contact your bookseller or Springer

- Vol. 3305: P.M.A. Sloot, B. Chopard, A.G. Hoekstra (Eds.), Cellular Automata. XV, 883 pages. 2004.
- Vol. 3293: C.-H. Chi, M. van Steen, C. Wills (Eds.), Web Content Caching and Distribution. IX, 283 pages. 2004.
- Vol. 3287: A. Sanfeliu, J.F.M. Trinidad, J.A. Carrasco Ochoa (Eds.), Progress in Pattern Recognition, Image Analysis and Applications. XVII, 703 pages. 2004.
- Vol. 3286: G. Karsai, E. Visser (Eds.), Generative Programming and Component Engineering. XIII, 491 pages. 2004.
- Vol. 3284: A. Karmouch, L. Korba, E.R.M. Madeira (Eds.), Mobility Aware Technologies and Applications. XII, 382 pages. 2004.
- Vol. 3280: C. Aykanat, T. Dayar, İ. Körpeoğlu (Eds.), Computer and Information Sciences - ISCIS 2004. XVIII, 1009 pages. 2004.
- Vol. 3274: R. Guerraoui (Ed.), Distributed Computing. XIII, 465 pages. 2004.
- Vol. 3273: T. Baar, A. Strohmeier, A. Moreira, S.J. Melior (Eds.), <<UML>> 2004 - The Unified Modelling Language. XIII, 454 pages. 2004.
- Vol. 3271: J. Vicente, D. Hutchison (Eds.), Management of Multimedia Networks and Services. XIII, 335 pages. 2004.
- Vol. 3270: M. Jeckle, R. Kowalczyk, P. Braun (Eds.), Grid Services Engineering and Management. X, 165 pages. 2004.
- Vol. 3269: J. López, S. Qing, E. Okamoto (Eds.), Information and Communications Security. XI, 564 pages. 2004.
- Vol. 3266: J. Solé-Pareta, M. Smirnov, P.V. Mieghem, J. Domingo-Pascual, E. Monteiro, P. Reichl, B. Stiller, R.J. Gibbens (Eds.), Quality of Service in the Emerging Networking Panorama. XVI, 390 pages. 2004.
- Vol. 3265: R.E. Frederking, K.B. Taylor (Eds.), Machine Translation: From Real Users to Research. XI, 392 pages. 2004. (Subseries LNAI).
- Vol. 3264: G. Palioras, Y. Sakakibara (Eds.), Grammatical Inference: Algorithms and Applications. XI, 291 pages. 2004. (Subseries LNAI).
- Vol. 3263: M. Weske, P. Liggesmeyer (Eds.), Object-Oriented and Internet-Based Technologies. XII, 239 pages. 2004.
- Vol. 3262: M.M. Freire, P. Chemouil, P. Lorenz, A. Gravey (Eds.), Universal Multiservice Networks. XIII, 556 pages. 2004.
- Vol. 3261: T. Yakhno (Ed.), Advances in Information Systems. XIV, 617 pages. 2004.
- Vol. 3260: I.G.M.M. Niemegeers, S.H. de Groot (Eds.), Personal Wireless Communications. XIV, 478 pages. 2004.
- Vol. 3258: M. Wallace (Ed.), Principles and Practice of Constraint Programming – CP 2004. XVII, 822 pages. 2004.
- Vol. 3257: E. Motta, N.R. Shadbolt, A. Stutt, N. Gibbins (Eds.), Engineering Knowledge in the Age of the Semantic Web. XVII, 517 pages. 2004. (Subseries LNAI).
- Vol. 3256: H. Ehrig, G. Engels, F. Parisi-Presicce, G. Rozenberg (Eds.), Graph Transformations. XII, 451 pages. 2004.
- Vol. 3255: A. Benczúr, J. Demetrovics, G. Gottlob (Eds.), Advances in Databases and Information Systems. XI, 423 pages. 2004.
- Vol. 3254: E. Macii, V. Palioras, O. Koufopavlou (Eds.), Integrated Circuit and System Design. XVI, 910 pages. 2004.
- Vol. 3253: Y. Lakhnech, S. Yovine (Eds.), Formal Techniques, Modelling and Analysis of Timed and Fault-Tolerant Systems. X, 397 pages. 2004.
- Vol. 3252: H. Jin, Y. Pan, N. Xiao, J. Sun (Eds.), Grid and Cooperative Computing - GCC 2004 Workshops. XVIII, 785 pages. 2004.
- Vol. 3251: H. Jin, Y. Pan, N. Xiao, J. Sun (Eds.), Grid and Cooperative Computing - GCC 2004. XXII, 1025 pages. 2004.
- Vol. 3250: L.-J. (LJ) Zhang, M. Jeckle (Eds.), Web Services. X, 301 pages. 2004.
- Vol. 3249: B. Buchberger, J.A. Campbell (Eds.), Artificial Intelligence and Symbolic Computation. X, 285 pages. 2004. (Subseries LNAI).
- Vol. 3246: A. Apostolico, M. Melucci (Eds.), String Processing and Information Retrieval. XIV, 332 pages. 2004.
- Vol. 3245: E. Suzuki, S. Arikawa (Eds.), Discovery Science. XIV, 430 pages. 2004. (Subseries LNAI).
- Vol. 3244: S. Ben-David, J. Case, A. Maruoka (Eds.), Algorithmic Learning Theory. XIV, 505 pages. 2004. (Subseries LNAI).
- Vol. 3243: S. Leonardi (Ed.), Algorithms and Models for the Web-Graph. VIII, 189 pages. 2004.
- Vol. 3242: X. Yao, E. Burke, J.A. Lozano, J. Smith, J.J. Merelo-Guervós, J.A. Bullinaria, J. Rowe, P. Tiňo, A. Kabán, H.-P. Schwefel (Eds.), Parallel Problem Solving from Nature - PPSN VIII. XX, 1185 pages. 2004.
- Vol. 3241: D. Kranzlmüller, P. Kacsuk, J.J. Dongarra (Eds.), Recent Advances in Parallel Virtual Machine and Message Passing Interface. XIII, 452 pages. 2004.
- Vol. 3240: I. Jonassen, J. Kim (Eds.), Algorithms in Bioinformatics. IX, 476 pages. 2004. (Subseries LNBI).
- Vol. 3239: G. Nicosia, V. Cutello, P.J. Bentley, J. Timmis (Eds.), Artificial Immune Systems. XII, 444 pages. 2004.

- Vol. 3238: S. Biundo, T. Fröhwirth, G. Palm (Eds.), KI 2004: Advances in Artificial Intelligence. XI, 467 pages. 2004. (Subseries LNAI).
- Vol. 3236: M. Núñez, Z. Maamar, F.L. Pelayo, K. Poussotchi, F. Rubio (Eds.), Applying Formal Methods: Testing, Performance, and M/E-Commerce. XI, 381 pages. 2004.
- Vol. 3235: D. de Frutos-Escríg, M. Nunez (Eds.), Formal Techniques for Networked and Distributed Systems – FORTE 2004. X, 377 pages. 2004.
- Vol. 3232: R. Heery, L. Lyon (Eds.), Research and Advanced Technology for Digital Libraries. XV, 528 pages. 2004.
- Vol. 3231: H.-A. Jacobsen (Ed.), Middleware 2004. XV, 514 pages. 2004.
- Vol. 3230: J.L. Vicedo, P. Martínez-Barco, R. Muñoz, M. Saiz Noeda (Eds.), Advances in Natural Language Processing. XII, 488 pages. 2004. (Subseries LNAI).
- Vol. 3229: J.J. Alferes, J. Leite (Eds.), Logics in Artificial Intelligence. XIV, 744 pages. 2004. (Subseries LNAI).
- Vol. 3226: M. Bouzeghoub, C. Goble, V. Kashyap, S. Spaccapietra (Eds.), Semantics for Grid Databases. XIII, 326 pages. 2004.
- Vol. 3225: K. Zhang, Y. Zheng (Eds.), Information Security. XII, 442 pages. 2004.
- Vol. 3224: E. Jonsson, A. Valdes, M. Almgren (Eds.), Recent Advances in Intrusion Detection. XII, 315 pages. 2004.
- Vol. 3223: K. Slind, A. Bunker, G. Gopalakrishnan (Eds.), Theorem Proving in Higher Order Logics. VIII, 337 pages. 2004.
- Vol. 3222: H. Jin, G.R. Gao, Z. Xu, H. Chen (Eds.), Network and Parallel Computing. XX, 694 pages. 2004.
- Vol. 3221: S. Albers, T. Radzik (Eds.), Algorithms – ESA 2004. XVIII, 836 pages. 2004.
- Vol. 3220: J.C. Lester, R.M. Vicari, F. Paraguaçu (Eds.), Intelligent Tutoring Systems. XXI, 920 pages. 2004.
- Vol. 3219: M. Heisel, P. Liggesmeyer, S. Wittmann (Eds.), Computer Safety, Reliability, and Security. XI, 339 pages. 2004.
- Vol. 3217: C. Barillot, D.R. Haynor, P. Hellier (Eds.), Medical Image Computing and Computer-Assisted Intervention – MICCAI 2004. XXXVIII, 1114 pages. 2004.
- Vol. 3216: C. Barillot, D.R. Haynor, P. Hellier (Eds.), Medical Image Computing and Computer-Assisted Intervention – MICCAI 2004. XXXVIII, 930 pages. 2004.
- Vol. 3215: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVII, 906 pages. 2004. (Subseries LNAI).
- Vol. 3214: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVIII, 1302 pages. 2004. (Subseries LNAI).
- Vol. 3213: M.G.. Negoita, R.J. Howlett, L.C. Jain (Eds.), Knowledge-Based Intelligent Information and Engineering Systems. LVIII, 1280 pages. 2004. (Subseries LNAI).
- Vol. 3212: A. Campilho, M. Kamel (Eds.), Image Analysis and Recognition. XXIX, 862 pages. 2004.
- Vol. 3211: A. Campilho, M. Kamel (Eds.), Image Analysis and Recognition. XXIX, 880 pages. 2004.
- Vol. 3210: J. Marcinkowski, A. Tarlecki (Eds.), Computer Science Logic. XI, 520 pages. 2004.
- Vol. 3209: B. Berendt, A. Hotho, D. Mladenic, M. van Someren, M. Spiliopoulou, G. Stumme (Eds.), Web Mining: From Web to Semantic Web. IX, 201 pages. 2004. (Subseries LNAI).
- Vol. 3208: H.J. Ohlbach, S. Schaffert (Eds.), Principles and Practice of Semantic Web Reasoning. VII, 165 pages. 2004.
- Vol. 3207: L.T. Yang, M. Guo, G.R. Gao, N.K. Jha (Eds.), Embedded and Ubiquitous Computing. XX, 1116 pages. 2004.
- Vol. 3206: P. Sojka, I. Kopecek, K. Pala (Eds.), Text, Speech and Dialogue. XIII, 667 pages. 2004. (Subseries LNAI).
- Vol. 3205: N. Davies, E. Mynatt, I. Siio (Eds.), UbiComp 2004: Ubiquitous Computing. XVI, 452 pages. 2004.
- Vol. 3204: C.A. Peña Reyes, Coevolutionary Fuzzy Modeling. XIII, 129 pages. 2004.
- Vol. 3203: J. Becker, M. Platzner, S. Vernalde (Eds.), Field Programmable Logic and Application. XXX, 1198 pages. 2004.
- Vol. 3202: J.-F. Boulicaut, F. Esposito, F. Giannotti, D. Pedreschi (Eds.), Knowledge Discovery in Databases: PKDD 2004. XIX, 560 pages. 2004. (Subseries LNAI).
- Vol. 3201: J.-F. Boulicaut, F. Esposito, F. Giannotti, D. Pedreschi (Eds.), Machine Learning: ECML 2004. XVIII, 580 pages. 2004. (Subseries LNAI).
- Vol. 3199: H. Schepers (Ed.), Software and Compilers for Embedded Systems. X, 259 pages. 2004.
- Vol. 3198: G.-J. de Vreede, L.A. Guerrero, G. Marín Raventós (Eds.), Groupware: Design, Implementation and Use. XI, 378 pages. 2004.
- Vol. 3196: C. Stary, C. Stephanidis (Eds.), User-Centered Interaction Paradigms for Universal Access in the Information Society. XII, 488 pages. 2004.
- Vol. 3195: C.G. Puntonet, A. Prieto (Eds.), Independent Component Analysis and Blind Signal Separation. XXIII, 1266 pages. 2004.
- Vol. 3194: R. Camacho, R. King, A. Srinivasan (Eds.), Inductive Logic Programming. XI, 361 pages. 2004. (Subseries LNAI).
- Vol. 3193: P. Samarati, P. Ryan, D. Gollmann, R. Molva (Eds.), Computer Security – ESORICS 2004. X, 457 pages. 2004.
- Vol. 3192: C. Bussler, D. Fensel (Eds.), Artificial Intelligence: Methodology, Systems, and Applications. XIII, 522 pages. 2004. (Subseries LNAI).
- Vol. 3191: M. Klusch, S. Ossowski, V. Kashyap, R. Ulland (Eds.), Cooperative Information Agents VIII. XI, 303 pages. 2004. (Subseries LNAI).
- Vol. 3190: Y. Luo (Ed.), Cooperative Design, Visualization, and Engineering. IX, 248 pages. 2004.
- Vol. 3189: P.-C. Yew, J. Xue (Eds.), Advances in Computer Systems Architecture. XVII, 598 pages. 2004.
- Vol. 3188: F.S. de Boer, M.M. Bonsangue, S. Graf, W.-P. de Roever (Eds.), Formal Methods for Components and Objects. VIII, 373 pages. 2004.

Table of Contents

Workshop 1: International Workshop on Information Grid and Knowledge Grid (IGKG'2004)

ART Based Predictive Caching System for XML P2P Database	3
<i>Wan-Song Zhang and Da-Xin Liu</i>	
DART-FAS: Federated Access Service on Database Grid	11
<i>Guozhou Zheng, Zhaojun Wu, and Chang Huang</i>	
A Scalable Information Grid Architecture Based on P2P and Web Service Technologies	19
<i>Dugki Min and Eunmi Choi</i>	
Research on Service-Oriented Software Framework	27
<i>Ying Li, Zhaojun Wu, and Shuguang Deng</i>	
An Accounting and QoS Model for Grid Computing	36
<i>Yang Guangwen, Yongwei Wu, Dazheng Huang, and Weimin Zheng</i>	
Reputation-Aware Contract-Supervised Grid Computing	44
<i>Xiangli Qu, Nong Xiao, Guang Xiang, and Xue-Jun Yang</i>	
The Analysis of Efficient Monitoring Grid Traffic with Flow Conservation Equation	52
<i>Xianghui Liu, Jianping Yin, Xicheng Lu, Zhiping Cai, and Jianmin Zhao</i>	
Dynamic Semantic Clustering Approach for Web User Interest	59
<i>Jiu Jun Chen, Ji Gao, Bei Shui Liao, and Jun Hu</i>	
Building Interoperable Software Components Repository Based on MMF	67
<i>Bing Li, Keqing He, Jin Liu, Qiang Wang, Peng Liang, and Rong Peng</i>	
An Approach for Constructing Software Component Repository in Grid Environments	75
<i>Dehui Du, Shi Ying, Keqing He, and Yangfan He</i>	
Agent-Based Modeling for Virtual Organizations in Grid	83
<i>Yuqing Zhai, Yuzhong Qu, and Zhiqiang Gao</i>	
A Pattern-Based Approach to Facilitating Service Composition	90
<i>Haitao Hu, Yanbo Han, Kui Huang, Gang Li, and Zhuofeng Zhao</i>	

Automatic Service Matching and Service Discovery Based on Ontology	99
<i>Chuan Lin, Zhaohui Wu, Shuiguang Deng, and Li Kuang</i>	
An Algorithm for Calculating Process Similarity to Cluster Open-Source Process Designs	107
<i>Kui Huang, Zhaotao Zhou, Yanbo Han, Gang Li, and Jing Wang</i>	
A Study on Semantic Web-Based Credit Evaluation Service	115
<i>Jing Fan, Bo Ren, and Jia-Mei Cai</i>	
Research on System Architecture and Service Composition of Spatial Information Grid	123
<i>Yu Tang and Ning Jing</i>	
Open Language Approach for Dynamic Service Evolution	132
<i>Thomas Weishäupl and Erich Schikuta</i>	
Adaptive Grid Workflow Scheduling Algorithm	140
<i>Shaohua Zhang, Yujin Wu, and Ning Gu</i>	
Building a Courseware Grid upon Dart Database Grid	148
<i>Meiyu Fang, Zhaohui Wu, Huajun Chen, Yuxin Mao, Guozhou Zheng, Zhao Xu, and Xiaojun Wu</i>	
A Novel Agent-Based Load Balancing Algorithm for Grid Computing	156
<i>Shudong Chen, Wenju Zhang, Fanyuan Ma, Jianhua Shen, and Minglu Li</i>	
Virtual Battlefield Attack-Defense Countermeasure Simulation on the Grid	164
<i>Jianhua Yang, Zhaohui Wu, Siliang Tang, and Xiaosheng Guo</i>	
Virtual Semantic Resource Routing Algorithm for Multimedia Information Grid	173
<i>Haiyang Zhang and Huadong Ma</i>	
Digital Library Application Grid – An Opportunity to Open Cultural Infrastructure	181
<i>Zhongzhi Luan, Depei Qian, Xiaoshe Dong, Xingjun Zhang, and Yunchun Li</i>	
Workshop 2: International Workshop on Storage Grid and Technologies (SGT'2004)	
A JDO Storage Cluster Based on Object Devices	187
<i>Youhui Zhang, Dongsheng Wang, Chongnan Gao, and Weimin Zheng</i>	
iNASC: A iSCSI-Based NAS Storage Cluster	195
<i>Dezhi Han, Changsheng Xie, and Faling Yi</i>	

Design and Implementation of a Non-volatile RAM Disk in the SAN Environment	203
<i>Ji-wu Shu, Bing Yu, and Rui Yan</i>	
Engineering Web Storage Servers Using Session Management	213
<i>Min Qu, Yafei Dai, and Yang Zhao</i>	
Topology and Resource Discovery in Peer-to-Peer Overlay Networks	221
<i>Dongsheng Li, Nong Xiao, and Xicheng Lu</i>	
An Implementation of Semi-synchronous Remote Mirroring System for SANs	229
<i>Rui Yan, Ji-wu Shu, and Dong-chan Wen</i>	
A Security Scheme for United Storage Network	238
<i>Yihui Luo, Changsheng Xie, and Chengfeng Zhang</i>	
STS: A Share Taper System for Storage Area Networks	246
<i>Jiefeng Xu and Zheng Qin</i>	
Storage Virtualization System with Load Balancing for SAN	254
<i>Weitao Sun, Ji-wu Shu, and Weimin Zheng</i>	
Design and Optimization of an iSCSI System	262
<i>Bigang Li, Ji-wu Shu, and Weimin Zheng</i>	
Measurement and Modeling of Large-Scale Peer-to-Peer Storage System	270
<i>Gang Liu, Mingzeng Hu, Binxing Fang, and Hongli Zhang</i>	
A Virtual Tape System Based on Storage Area Networks	278
<i>Fei Mu, Ji-wu Shu, Bigang Li, and Weimin Zheng</i>	
Cocktail Search in Unstructured P2P Networks	286
<i>Xiuguo Bao, Binxing Fang, and Mingzeng Hu</i>	
Data I/O Optimization in Storage Systems	294
<i>Di Wang, Ji-wu Shu, and Meiming Shen</i>	
Data Resource Discovery in a Computational Grid	303
<i>Sajindra Jayasena, Chin-Peng Yee, Jie Song, Abele Stoelwinder, Chong Wee See, and Wai-Hong Wong</i>	
The Design and Implementation of a Locking Mechanism for a Distributed Com- puting Environment	311
<i>Jaechun No, Hyo Kim, and Jang-sun Lee</i>	
Replica Location Mechanism Based on DHT and the Small-World Theory	319
<i>Xindong You, Guiran Chang, Wei Yang, Wandan Zeng, and Xueyao Chen</i>	

Workshop 3: International Workshop on Information Security and Survivability for Grid (GISS'2004)

A New Chameleon Multi-signature Based on Bilinear Pairing	329
<i>Chunbo Ma and Dake He</i>	
A Topology-Adapted Network Defense Model Based on Mobile Agent	335
<i>Yichuan Jiang, Yiping Zhong, and Shiyong Zhang</i>	
AT-RBAC: An Authentication Trustworthiness-Based RBAC Model	343
<i>Lunwei Wang, Lifeng Wei, Xiangke Liao, and Huaimin Wang</i>	
WBEM Based Distributed Network Monitoring	351
<i>Bo Liu and Hui Liu</i>	
Multiparty Joint Authentication: Extending the Semantics of Single Sign-On for Grids	358
<i>Hui Liu and Minglu Li</i>	
A Software Engineering Perspective for Services Security	366
<i>Jun Han</i>	
Algorithms for Congestion Detection and Control	374
<i>Wu Liu, Hai-Xin Duan, Jian-Ping Wu, Xing Li, and Ping Ren</i>	
Modeling Time-Related Trust	382
<i>Chenlin Huang, Hua-Ping Hu, and Zhiying Wang</i>	
Defending DDoS Attacks Using Network Traffic Analysis and Probabilistic Packet Drop	390
<i>Jungtaek Seo, Cheolho Lee, and Jongsub Moon</i>	
Building a Secure Infrastructure for P2P Applications in Mobile Ad Hoc Networks	398
<i>Guangming Hu, Zunguo Huang, Hua-Ping Hu, and Zhenghu Gong</i>	
Middleware Framework for Secure Grid Application in Mobile Web Services Environment	406
<i>Namje Park, Kiyoung Moon, Jongsu Jang, and Sungwon Sohn</i>	
Autonomic Computing for Defense-in-Depth Information Assurance: Architecture and a Case Study	414
<i>Xin Xu, Zunguo Huang, and Lei Xuan</i>	
Mining Maximal Frequent Itemsets for Intrusion Detection	422
<i>Hui Wang, Qing-Hua Li, Huanyu Xiong, and Sheng-Yi Jiang</i>	

Context-Aware Role-Based Access Control Model for Web Services	430
<i>Xu Feng, Xie Jun, Huang Hao, and Xie Li</i>	
Policy-Tree Based Proactive Defense Model for Network Security	437
<i>Feng Zhang, Zhiguang Qin, and Shijie Zhou</i>	
Researches on Scalable Architecture for Security Information Distribution Service	450
<i>Haitao Chen, Chuanfu Xu, Zunguo Huang, Zhenghu Gong, and Hua-Ping Hu</i>	
A Sequential Pattern Mining Algorithm for Misuse Intrusion Detection	458
<i>Shi-Jie Song, Zunguo Huang, Hua-Ping Hu, and Shi-Yao Jin</i>	
Network Performance Measurement Methodologies in PGMS	466
<i>Yuanzhe Yao, Binxing Fang, Hongli Zhang, and Wei Wang</i>	
Via Firewalls	474
<i>Lu Yan</i>	
A Grid Security Infrastructure Based on Behaviors and Trusts	482
<i>Xiaolin Gui, Bing Xie, Yinan Li, and Depei Qian</i>	
Research on a Quantitative Security Risk Assessment Approach in Large-Scale Early Warning System	490
<i>Lei Xuan and Xin Xu</i>	
A Formal Logic for Shared Resource Access Control in the Grid	498
<i>Baiyan Li, Ruonan Rao, Jinyuan You, and Minglu Li</i>	
Security Enhanced to GSI: An Integrated Framework with a Mechanism	506
<i>Baoliang Zhang, Hanping Hu, Xiaogang Wu, and Tao Kong</i>	
Reliable Accounting in Grid Economic Transactions	514
<i>Luigi Catuogno, Pompeo Faruolo, Umberto Ferraro Petrillo, and Ivan Visconti</i>	
A Gravity-Based Intrusion Detection Method	522
<i>Sheng-Yi Jiang, Qing-Hua Li, and Hui Wang</i>	
Anomaly Detection Using Fast SOFM	530
<i>Jun Zheng, Mingzeng Hu, Binxing Fang, and Hongli Zhang</i>	
Research on Secure Multicast Technology in Grid-Based Large-Scale Distributed Simulation Applications	538
<i>Wei Wu, Ling Shen, Haitao Huo, and Xiaoqian Li</i>	